CLAIMS

1. A polarizing plate housed in a moisture-proofed container, which comprises

a transparent protective film comprising a cellulose acylate film, wherein $Re(\lambda)$ and $Rth(\lambda)$ defined by formulae (I) and (II) satisfies formulae (III) and (IV),

wherein

a humidity in the moisture-proofed container is from 40% RH to 65% RH at 25°C:

(I) $Re(\lambda) = (nx-ny)\times d$

(II) $Rth(\lambda) = \{(nx+ny)/2-nz\}\times d$

(III) $30 \leq Re(590) \leq 200$

(IV) $70 \leq Rth(590) \leq 400$

wherein $Re(\lambda)$ is a retardation value by nm in a film plane of the cellulose acylate film with respect to a light having a wavelength of λ nm;

$Rth(\lambda)$ is a retardation value by nm in a direction of thickness of the cellulose acylate film with respect to the light having the wavelength of λ nm;

nx is a refractive index in a slow axis direction in the film plane;

ny is a refractive index in a fast axis direction in the film plane;

nz is a refractive index in the direction perpendicular the film plane; and

d is a thickness of the cellulose acylate film.

2. A polarizing plate housed in a moisture-proofed container, which comprises

a transparent protective film comprising a cellulose acylate film, wherein $Re(\lambda)$ and $Rth(\lambda)$ defined by formulae (I) and (II) satisfies formulae (III) and (IV),

wherein

a first humidity in the moisture-proofed container is within a range of ±15% RH with respect to a second humidity, when the polarizing plate is stuck to a liquid crystal cell at the second humidity:

(I) $Re(\lambda) = (nx-ny)\times d$

(II) $Rth(\lambda) = \{(nx+ny)/2-nz\}\times d$

(III) $30 \leq Re(590) \leq 200$

(IV) $70 \leq Rth(590) \leq 400$

wherein $Re(\lambda)$ is a retardation value by nm in a film plane of the cellulose acylate film with respect to a light having a wavelength of λ nm;

$Rth(\lambda)$ is a retardation value by nm in a direction perpendicular the film plane with respect to the light having the wavelength of λ nm;

nx is a refractive index in a slow axis direction in the film plane;

ny is a refractive index in a fast axis direction in the film plane;

nz is a refractive index in the direction perpendicular the film plane; and

d is a thickness of the cellulose acylate film.

3. The polarizing plate according to claim 1 or 2, wherein the cellulose acylate film satisfies formula (V):

(V) $230 \leq Rth(590) \leq 300$.

4. The polarizing plate according to any one of claims 1 to 3, wherein

the cellulose acylate film comprises a cellulose acylate in which a hydroxyl group of a cellulose is substituted by at least one of an acetyl group and an acyl group having 3 to 22 carbon atoms; and

a substitution degree A of the acetyl group and a substitution degree B of the acyl group having 3 to 22 carbon atoms satisfy formula (VI):

(VI) $2.0 \leq A+B \leq 3.0$.

5. The polarizing plate according to claim 4, wherein the acyl group having 3 to 22 carbon atoms comprises at least one of a butanoyl group and a propionyl group.

6. The polarizing plate according to any one of claims 1 to 5, wherein the cellulose acylate film comprises a cellulose acylate in which a total substitution degree of a hydroxyl group at sixth position of a cellulose is 0.75 or more.

7. The polarizing plate according to any one of claims 1 to 6, wherein the cellulose acylate film comprises a retardation-developing agent comprising at least one of a rod-like compound and a discotic compound.

8. The polarizing plate according to any one of claims 1 to 7, wherein the cellulose acylate film comprises at least one of a plasticizer, an ultraviolet absorber, and a parting agent.

9. The polarizing plate according to any one of claims 1 to 8, wherein the cellulose acylate film has a thickness of 40 to 110 μm.

10. The polarizing plate according to any one of claims 1 to 9, wherein the cellulose acylate film has a glass transition temperature Tg of 70 to 135°C.

11. The polarizing plate according to any one of claims 1 to 10, wherein the cellulose acylate film has an elastic modulus of 1500 to 5000 MPa.

12. The polarizing plate according to any one of claims 1 to 11, wherein the cellulose acylate film has an equilibrium moisture content of 3.2% or less at 25°C and 80% RH.

13. The polarizing plate according to any one of claims 1 to 12, wherein the cellulose acylate film has a water vapor permeability of 300 $g/m^2 \cdot 24$ hr to 1000 $g/m^2 \cdot 24$ hr in terms of a film thickness of 80 μm under a condition of 40°C and 90% RH for 24 hours.

14. The polarizing plate according to any one of claims 1 to 13, wherein the cellulose acylate film has a haze of 0.01 to 2%.

15. The polarizing plate according to any one of claims 1 to 14, wherein the cellulose acylate film comprises a silicon dioxide particle having an average secondary particle size of 0.2 to 1.5 μm.

16. The polarizing plate according to any one of claims 1 to 15, wherein the cellulose acylate film has a photoelastic coefficient of $50\times10^{-13}cm^2$/dyne or less.

17. The polarizing plate according to any one of claims 1 to 16, which comprises at least one of a hard coating layer, an antiglare layer.

18. A liquid crystal display comprising a polarizing plate according to any one of claims 1 to 17.

19. A liquid crystal display comprising:

a liquid crystal cell of an OCB-mode or a VA-mode; and

a polarizing plate according to any one of claims 1 to 17 on each of upper and lower sides of the liquid crystal cell.

20. A liquid crystal display comprising:

a liquid crystal cell of a VA-mode;

a back light; and

a polarizing plate according to any one of claims 1 to 17 between the liquid crystal cell and the back light.

21. A moisture-proofed container housing a polarizing plate, which has a internal humidity of 40% RH to 65% RH at 25°C,

wherein the polarizing plate comprises a transparent protective film comprising a cellulose acylate film, wherein Re(λ) and Rth(λ) defined by formulae (I) and (II) satisfies formulae (III) and (IV):

(I) $Re(\lambda) = (nx-ny)\times d$

(II) $Rth(\lambda) = \{(nx+ny)/2-nz\}\times d$

(III) $30 \leq Re(590) \leq 200$

(IV) $70 \leq Rth(590) \leq 400$

wherein Re(λ) is a retardation value by nm in a film plane of the cellulose acylate film with respect to a light having a wavelength of λ nm;

Rth(λ) is a retardation value by nm in a direction of thickness of the cellulose acylate film with respect to the light having the wavelength of λ nm;

nx is a refractive index in a slow axis direction in the film plane;

ny is a refractive index in a fast axis direction in the film plane;

nz is a refractive index in the direction perpendicular the film plane; and

d is a thickness of the cellulose acylate film.

22. The moisture-proofed container according to claim 21, which comprises a material having a water vapor permeability of 30 $g/m^2\cdot24$ hr or less under a condition of 40°C and 90% RH for 24 hours.

23. The moisture-proofed container according to claim 21, which comprises a plastic film having a ceramics layer.

24. The moisture-proofed container according to claim 21, which comprises a plastic film and an aluminum foil.

25. A method for storing a polarizing plate, which comprises housing the polarizing plate in a moisture-proofed container having a internal humidty of 40% RH to 65% RH at 25°C,

wherein the polarizing plate comprises a transparent protective film comprising a cellulose acylate film, wherein Re(λ) and Rth(λ) defined by formulae (I) and (II) satisfies formulae (III) and (IV):

(I) $Re(\lambda) = (nx-ny)\times d$

(II) $Rth(\lambda) = \{(nx+ny)/2-nz\}\times d$

(III) $30 \leq Re(590) \leq 200$

(IV) $70 \leq Rth(590) \leq 400$

wherein Re(λ) is a retardation value by nm in a film plane of the cellulose acylate film with respect to a light having a wavelength of λ nm;

Rth(λ) is a retardation value by nm in a direction of thickness of the cellulose acylate film with respect to the light having the wavelength of λ nm;

nx is a refractive index in a slow axis direction in the film plane;

ny is a refractive index in a fast axis direction in the film plane;

nz is a refractive index in the direction perpendicular the film plane; and

d is a thickness of the cellulose acylate film.

26. A method for producing a liquid crystal display, which comprises:

storing a polarizing plate at a first humidity; and

sticking the polarizing plate to a liquid crystal cell at a second humidity,

wherein

the first humidity is within a range of ±15% RH with respect to the second humidity; and

the polarizing plate comprises a transparent protective film comprising a cellulose acylate film, wherein Re(λ) and Rth(λ) defined by formulae (I) and (II) satisfies formulae (III) and (IV):

(I) $Re(\lambda) = (nx-ny)\times d$

(II) $Rth(\lambda) = \{(nx+ny)/2-nz\}\times d$

(III) $30 \leq Re(590) \leq 200$

(IV) $70 \leq Rth(590) \leq 400$

wherein Re(λ) is a retardation value by nm in a film plane of the cellulose acylate film with respect to a light having a wavelength of λ nm;

Rth(λ) is a retardation value by nm in a direction of thickness of the cellulose acylate film with respect to the light having the wavelength of λ nm;

nx is a refractive index in a slow axis direction in the film plane;

ny is a refractive index in a fast axis direction in the film plane;

nz is a refractive index in the direction perpendicular the film plane; and

d is a thickness of the cellulose acylate film.